



# **Restoration Advisory Board Biddle Air National Guard Base**

Bill Myer  
NGB/A4VR

8 December 2021



# Updates Since September 2021



- Environmental Restoration Program Sites:
  - No Updates
- PFAS Remedial Investigation:
  - 31 August: Submitted Draft Tech Memo for Round 7 regional surface water sampling to EPA, DEP, and Navy.
  - 28 & 29 June: Completed Round 8 regional surface water sampling in coordination with the Navy.
  - 30 Nov: Submitted Final Tech Memo for Round 6 regional surface water sampling to EPA, DEP, and Navy.
  - 30 August: Held technical consultation with EPA/PADEP covering bedrock characterization sampling methodology.
    - Preparing a Technical Memorandum to clarify RI DQOs, conduct comparative analysis of multiport well sampling groundwater quality with traditional monitoring well/piezometer groundwater water data.
    - EPA/PADEP/ANG Technical Meeting in Dec 2021/Jan 2022 to discuss DQOs and comparative analysis study of bedrock monitoring well groundwater quality versus multiport well groundwater quality
- PFAS Interim Groundwater Action:
  - Scheduling a meeting with EPA and PADEP to discuss scope of work in January 2022
- PFAS surface water treatment:
  - 11 August 2021 New Surface Water Treatment System started; as of 30 Nov 2021 treated 35M gallons
  - 29 Nov 2021 Submitted Storm Water Treatment Completion Report to EPA/PADEP



# 3 Month Forecast of Activities



- January 2022 meeting with EPA/PADEP to discuss ANG interim groundwater action scope of work
- 13 Dec 2021 Regional Surface Water Sampling
- December 2021 meeting with EPA/PADEP to discuss future drinking water sampling/response action status/future level of effort
- Dec 21/Jan 22 meeting with EPA/PADEP to discuss UFP QAPP modifications related to bedrock groundwater characterization and revised scope of work Phase II and III RI.
- Continued storm water treatment operations (Warminster)
- Continued coordination with NWWA for residential drinking water connections



# Remedial Investigation Project Objectives



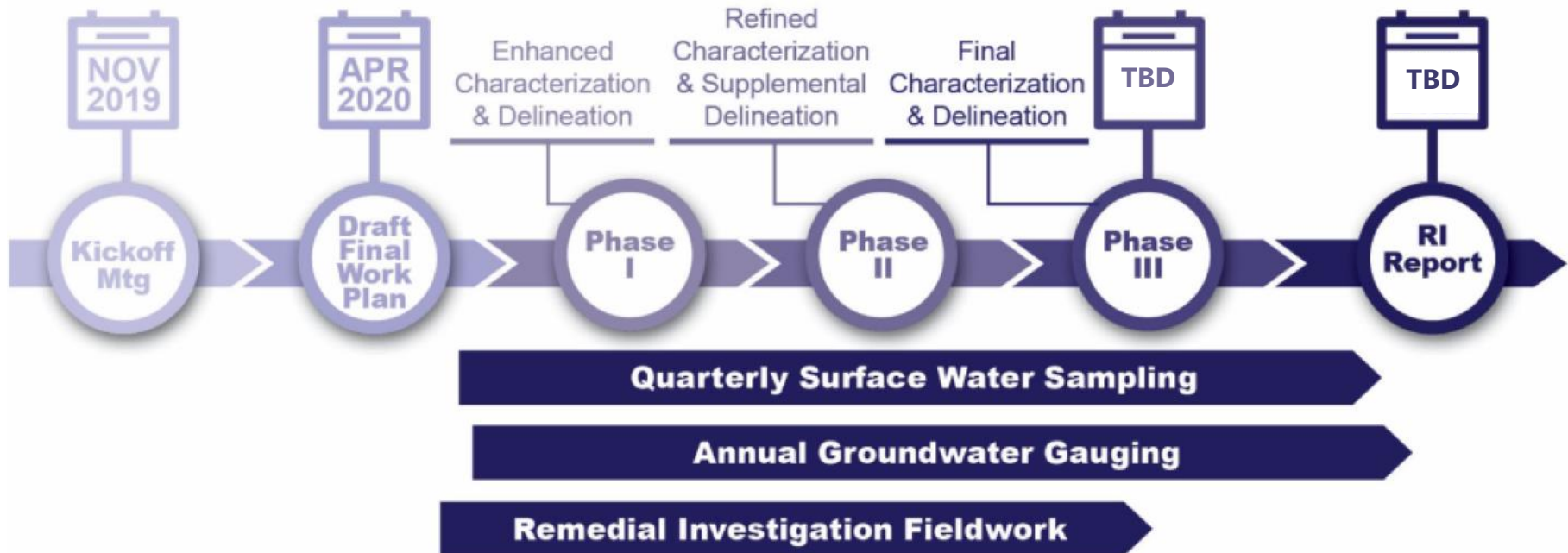
- Delineate the nature and extent of PFAS contamination, the threat to human health and the environment and prepare a Remedial Investigation (RI) Report.
  - Collect soil, sediment, surface water, and groundwater PFAS data on and around Biddle ANGB.
  - Conduct Baseline Risk Assessment (BRA).
  - Investigate link between groundwater and unnamed tributary to Park Creek.
  - Obtain data required to inform future development of a Feasibility Study.
  - Conduct quarterly surface water sampling for PFAS in coordination with the Navy.
  - Conduct annual potentiometric gauging to support USGS model.



# Previously Identified Potential PFOS/PFOA Source Areas



# Remedial Investigation General Process and Schedule





# Remedial Investigation Progress



- EPA provided updated comments on the UFP-QAPP, previously approved in July 2020
- EPA, ANG, and Leidos developing path forward for remedial investigation. UFP-QAPP addendum will be developed to address revised scope
- Revised scope of work and contract modification in progress for additional/modified Remedial Investigation effort

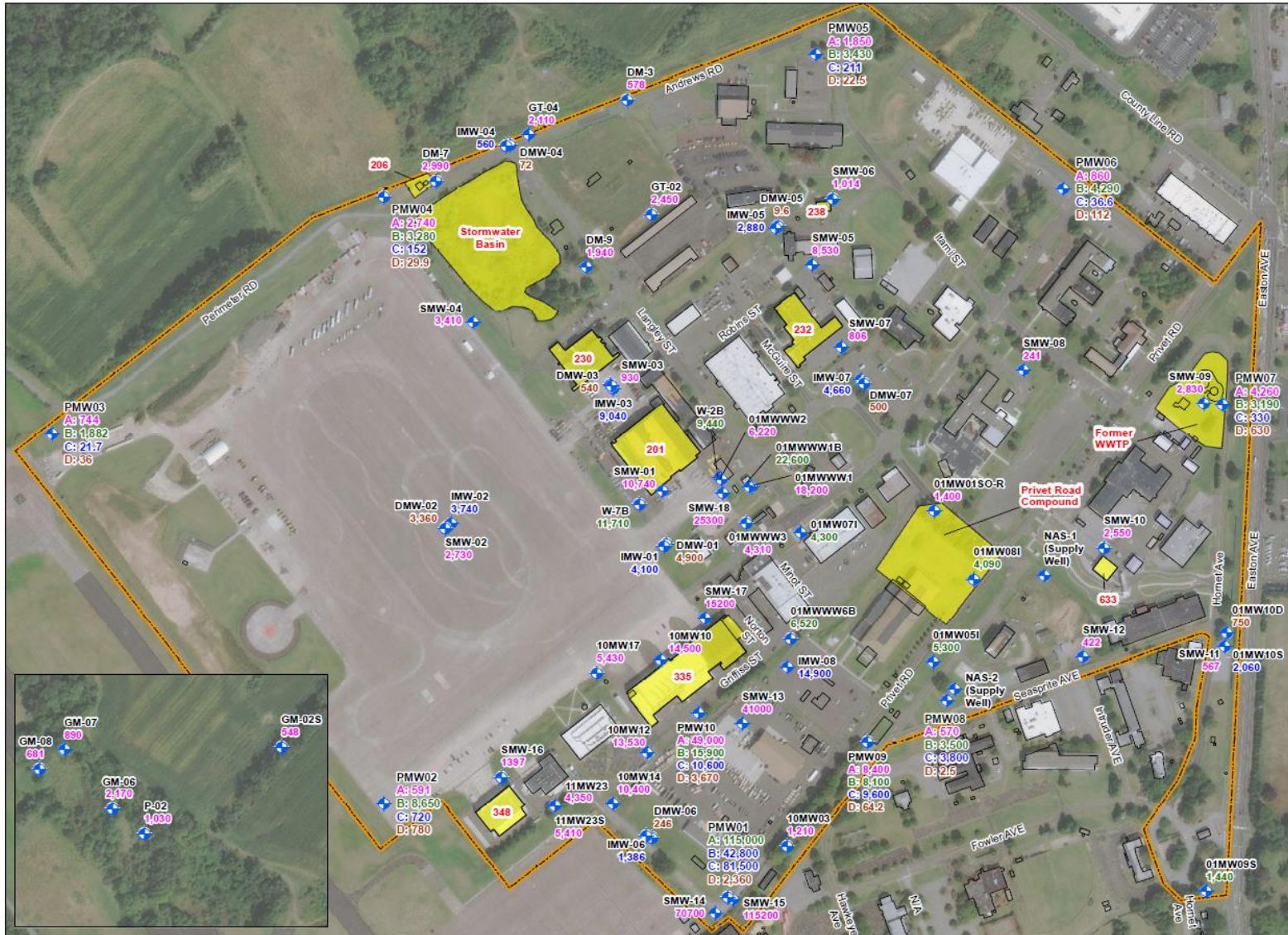


# Remedial Investigation Progress



- Completed groundwater sampling under Phase II in April
- Held discussions with EPA and PADEP regarding revised scope of work for Phase II and III







# Quarterly Surface Water Sampling



- Performed regional Surface Water Sampling with Navy and USGS between June 28 & 29, 2021
- Finalized Sampling Memo for Round 5/6
- Received comments on Sampling Memo for Round 7. Responses pending
- Memos for Rounds 8 and 9 in production
- The next Surface Water sampling event is planned for the week of December 13

# PFOS/PFOA Water Treatment

## Biddle ANGB



- PFOS/PFOA has been detected in surface water leaving the Biddle Air National Guard Base. This water is primarily groundwater that discharges to a storm water detention basin on the northwest boundary of the Base and flows to Park Creek which flows to the Little Neshaminy Creek.
- 500 gallon per minute treatment plant began operations on 11 August 2021. ~ 35M gallons treated through the end of November 2021.
- Typical base flow treated = 120,000 gallons/day
- Monthly treatment plant effluent sampling required by NPDES Permit: PFOS+PFOA < 2ppt.
- Construction and O&M through Warminster Cooperative Agreement.

# NWWA Activities



- North Wales Water Authority assumed responsibility for Warrington water service area
- Cooperative agreement for water system actions
- PFAS treatment added to 3 municipal wells
- Construction underway to add PFAS treatment to 2 additional wells – 2022 completion
- Two water main extensions are in design with construction bidding expected in October 2021
- Service line connections and private well decommissioning ongoing





# Private Well Sampling

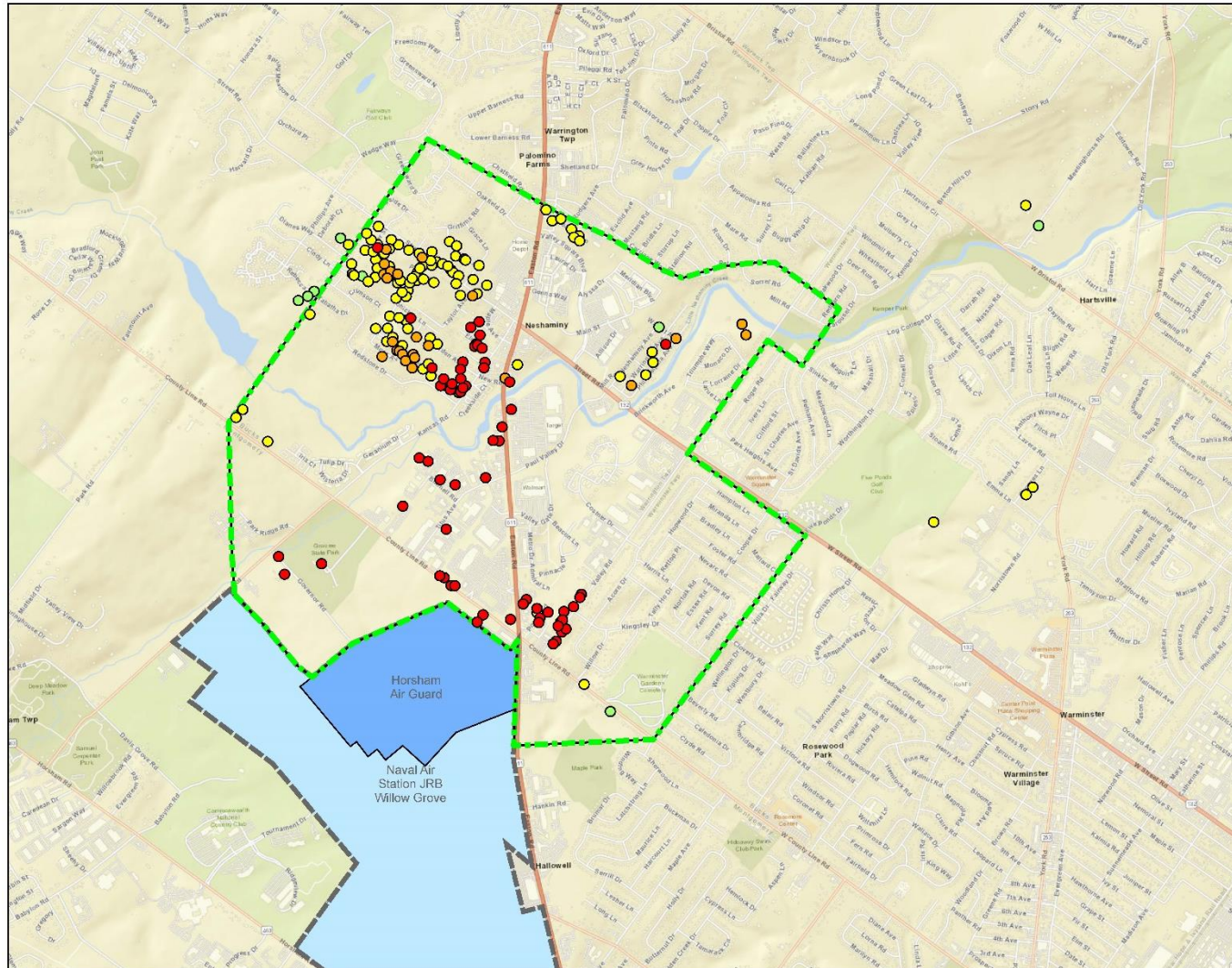


- ANG has contract in place with Wood to provide PFOS/PFOA testing of private drinking water wells and supply bottled water to properties with PFOS/PFOA at or above the EPA Health Advisory level (HA) for residents within our area of responsibility in Horsham, Warminster, and Warrington
  - Total number of private wells sampled by ANG are:
    - Horsham
      - 6 wells sampled
      - 5 were above HA
      - 4 have been connected to municipal water
      - 1 well abandoned by Wood
    - Warrington:
      - 150 well sampled
      - 46 are above HA
      - 44 have been connected
      - 16 met the >40<70 HA: 5 have completed 4 quarters sampling rounds <70
    - Warminster: 12\* well sampled
      - 11 are above HA
      - 8 have been connected municipal water
- \*Some of these properties are on Valley Road with Warminster mailing addresses but are located in Warrington Township
- Sampling contact for ANG area of responsibility: Brad LaForest at [brad.laforest@woodplc.com](mailto:brad.laforest@woodplc.com) or (207) 828-3620





# Private Well Sampling Map



## PFAS Sample Results for January 2021

Horsham Air Guard Station  
Horsham and Warrington  
Townships, Pennsylvania

## Legend

- PFOS+PFOA not detected
- PFOS+PFOA at or below 0.040 µg/L
- PFOS+PFOA between 0.040 and 0.070 µg/L
- PFOS+PFOA above 0.070 µg/L
- ANG Sampling Area
- Horsham Air Guard
- Former NAS JRB Willow Grove

## Notes & Sources

Notes:  
µg/L - micrograms per liter

PFAS - Per- and polyfluoroalkyl substances  
PFOS - Perfluorooctanesulfonic acid  
PFOA - Perfluorooctanoic acid

Health Advisory Level (HAL) is the sum  
of PFOS+PFOA (0.070 µg/L)

Base Map Source:  
Street map data from ArcGIS Online map services.  
Map service information available at:  
[http://gto.arcgisonline.com/maps/World\\_Street\\_Map](http://gto.arcgisonline.com/maps/World_Street_Map)

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Feet

**wood.**

Wood  
Environment & Infrastructure Solutions  
511 Congress St. Suite 200  
Portland, ME 04101  
(207) 828-3200

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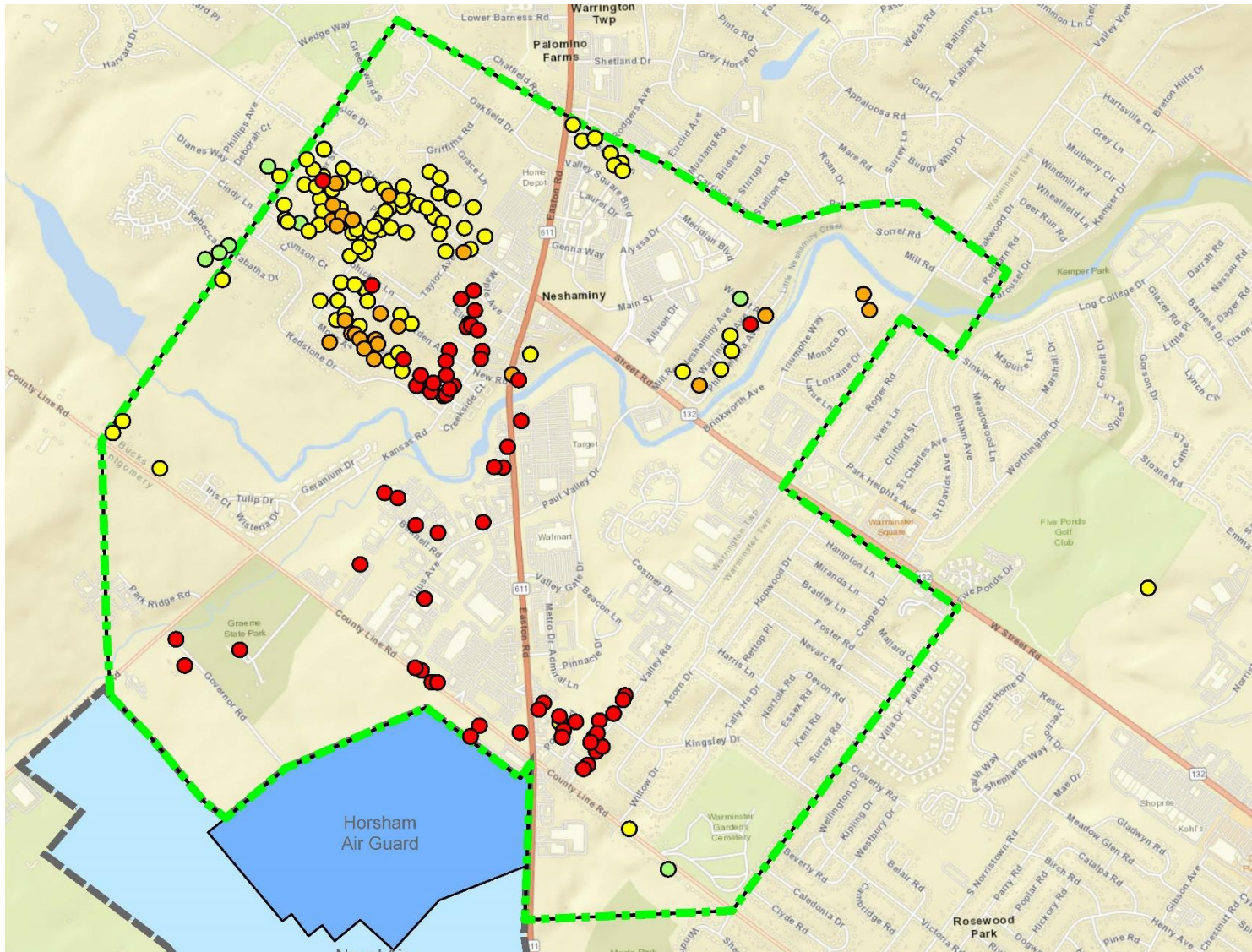
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# Private Well Sampling Map



# Air Force Installation & Mission Support Center



## Relative Risk Site Evaluation (RRSE)

**Dr. JayneAnne Bond**  
**Toxicologist**  
**AFCEC/CZTE**



# Goals and Agenda



- **Purpose - Communicate the RRSE purpose and process**
- **Agenda**
  - **What is RRSE?**
  - **Why is it important?**
  - **How do I fit in?**
  - **What are the details?**
  - **FY23 and beyond**
- **End Goal - Answer questions and capture concerns**



# ***What is the RRSE?***



- **RRSE Stands for Relative Risk Site Evaluation**
- **It is described in the Department of Defense (DoD), Relative Risk Site Evaluation Primer, Summer 1997 Revised Edition**
- **It is a methodology to sequence environmental restoration work**
- **It is used to evaluate the relative risks posed by an environmental restoration site in relation to other sites**
- **Considered important in the sequencing process but not the sole factor**

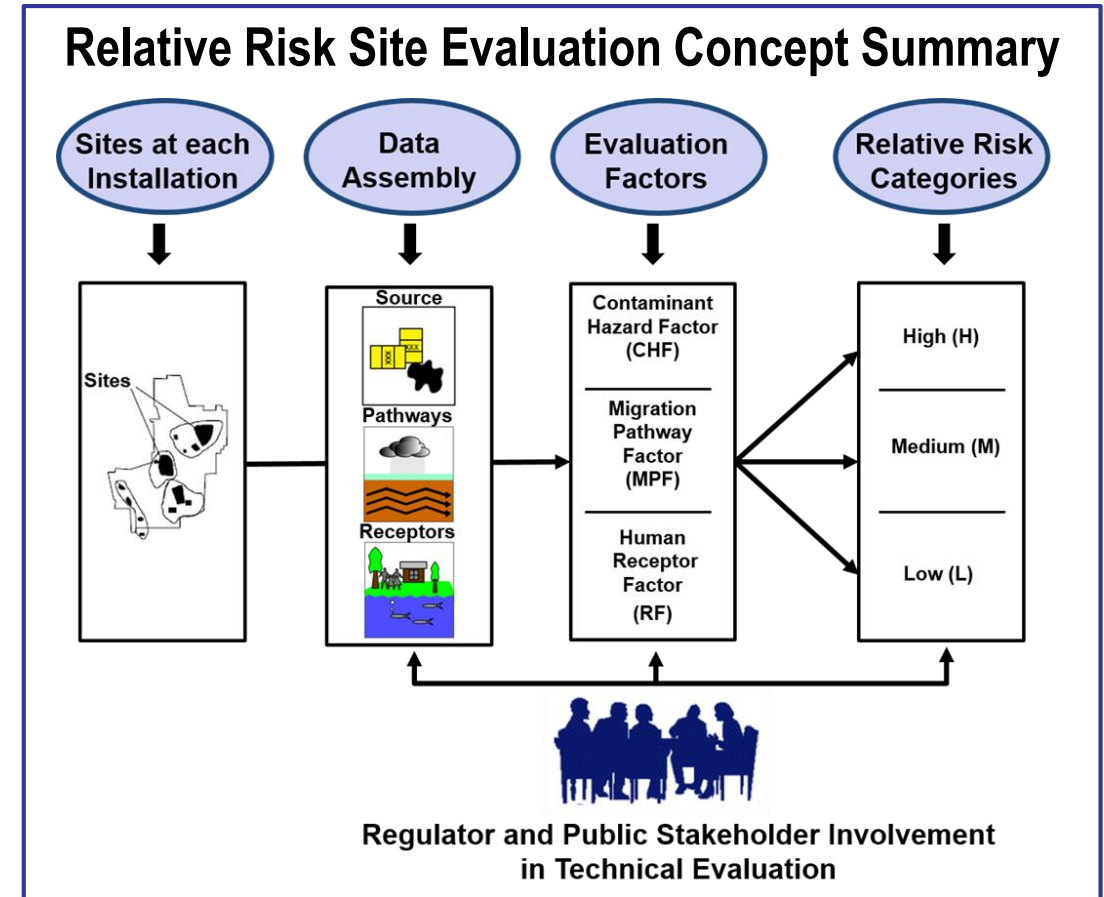
***Goal of RRSE is to establish sequencing of sites with the premise of “worst first”***

DoDM 4715.20, Defense Environmental Restoration Program (DERP), 9 Mar 2012, Incorporating Change 1, August 31, 2018; DoD, Relative Risk Site Evaluation Primer, Summer 1997 Revised Edition - [https://www.denix.osd.mil/references/dod/policy-guidance/relative-risk-site-evaluation-primer/RRSE\\_Primer\\_Summer1997.pdf/](https://www.denix.osd.mil/references/dod/policy-guidance/relative-risk-site-evaluation-primer/RRSE_Primer_Summer1997.pdf/)



# What is the *RRSE* Framework?

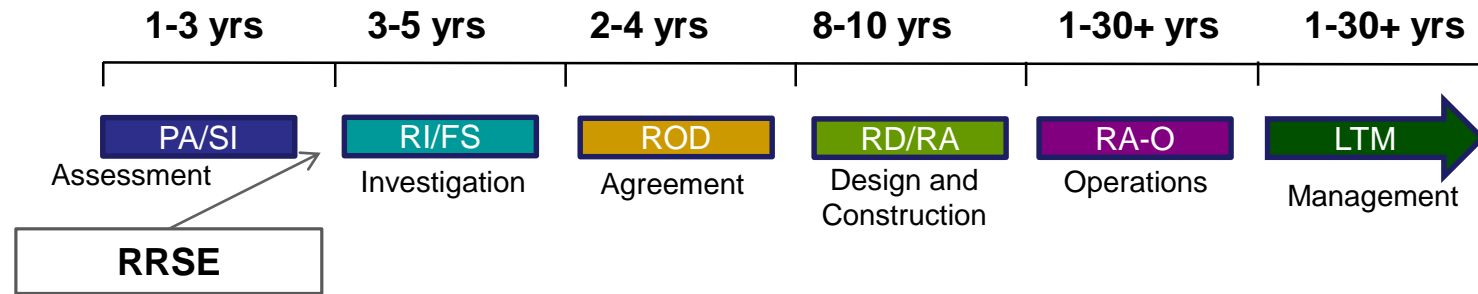
- A DoD-wide approach for evaluating the relative risk to human health and the environment
- Based on information fundamental to risk assessment
- RRSE is *NOT* a CERCLA risk assessment



DoD, Relative Risk Site Evaluation Primer, Summer 1997 Revised Edition, CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act



# Where is *RRSE* in the *CERCLA* Process?



- Installations entering the RI/FS stage of CERCLA
- The highest concentrations found in final documents along with sources, pathways, and receptors are compiled in worksheets.
- The documented data is used to determine evaluation factors and relative risk categories via RRSE Process.



# ***FY23 and Beyond***



- **RRSE Worksheets provide the inputs to the sequencing list.**
- **Sequencing is based on “worst-first” and other factors to determine which sites receive funding first.**
- **The outputs help determine the sequence of environmental restoration activities.**
- **This review process is completed yearly from February to September.**



# ***FY23 and Beyond – Where do I fit in?***



**Step 1**  
Annual RRSE Kickoff Meeting

**FEB – MAR '22**

CZTE PFAS Technical Support Team conducts lessons learned, builds process and schedule

**Step 2**  
RRSE Process Call Letter

**MAR – APR '22**

CZO/CZR leadership sends Call Letter through TMT

**Step 3**  
Completed RRSE Worksheets Due

**MAY – JUN '22**

RPMs submit completed Worksheets

**Step 5**  
Internal QC Review

**JUN – JUL '22**

Internal Quality Control (QC) Review Team reviews and edits RRSE Worksheets “live”; approves final versions

**Step 6**  
Final Prioritized List

**AUG '22**

CZTE PFAS Team processes worksheets and produces a sequence list. Updates after this stage date will be processed in the next cycle.



***Your Success is Our Mission!***